



Curriculum Overview: Engineering Manufacturing

Year group: 11

What your child will learn each half term:

This overview shows the key topics, skills, and knowledge your child will be learning in **Engineering Manufacturing** in **Year 11**. It helps families understand what's being taught, how it builds on previous learning, and how you can support your child at home.

- **What we are learning:** The topic or focus for the half term.
- **Key knowledge & skills:** What students should understand and be able to do.
- **How we assess learning:** knowledge checks, practical tasks, written responses and formal assessments.
- **Key words to know:** Vocabulary students will learn and use.

	What we are learning	Key skills	How we will assess learning in this unit	Homework	Key vocabulary for this unit
HT 1	Types of Engineering materials (Exam unit) Manufacture in Quantity –Safely use processes and equipment to make products in quantity. (NEA unit) Setting up the CNC equipment Operating the CNC equipment. NEA 2 - task 1 NEA 2 - task 2	Setting up of CNC Difference between pure metal and metal alloys Work holding Setting datum points Types of ferrous metals Safety procedures Types of non-ferrous metals Operating CNC equipment Thermo and thermosetting polymer difference Operating CNC equipment Types of Thermo-polymers Types of Thermosetting polymers	Lesson low stakes quiz End of half term assessment (exam unit) NEA 2 - task 1 NEA 2 - task 2	Homework is set weekly as a recap of the lesson theme for the week. Students are expected to complete this sheet and hand into the teacher on the given day. Each week students will complete a low stake quiz which will assess their understanding of the week's topic.	Tooling Work holding Datum points Procedures Pure metal Metal Alloys Ferrous metal Non-Ferrous metal Thermoforming Thermosetting Polymer
HT2	Types of Engineering materials - Interpreting orthographic drawings (Exam unit) Manufacture in Quantity –Safely use processes and equipment to make products in quantity. (NEA unit) Apply quality control methods for volume manufacture. Exam preparation for Mocks	Apply quality control methods for volume manufacture. Take images of your parts and compare to the templates. Types of ceramic Comparison of dimensional characteristic against engineering drawings. Composite materials metal alloys and composites Apply quality control methods for volume manufacture.	Lesson low stakes quiz End of half term assessment (exam unit) Mock Exam preparation NEA 2 - task 3 NEA 2 - task 4	Homework is set weekly as a recap of the lesson theme for the week. Students are expected to complete this sheet and hand into the teacher on the given day. Each week students will complete a low stake quiz which will assess their understanding of the week's topic.	Ceramic Composites GRP CRP Smart materials Orthographic drawings Third angle projection Conventions, Abbreviations, Mechanical features

		Use of statistical process control (flow charts) Types of composites GRP / CRP Use of Go-NoGo gauges Understand Smart materials Interpret orthographic drawing 3 rd Angle Drawing conventions and abbreviations			
HT3	Manufacturing requirements (Exam unit) Influence of the scale of manufacture on the production method Quality Assurance and Control. Exam preparation	Scale of production Quality Inventory management Lean manufacture Globalisation	Lesson low stakes quiz. Exam preparation NEA 2 - task 5	Homework is set weekly as a recap of the lesson theme for the week. Students are expected to complete this sheet and hand into the teacher on the given day. Each week students will complete a low stake quiz which will assess their understanding of the week's topic.	Quality Assurance Quality Control.
HT4	Developments in engineering manufacture (Exam unit) Inventory management Lean manufacturing Globalisation.	NEA and Exam work revision and re-submissions	Lesson low stakes quiz Exam preparation	Exam homework topic booklets to be completed.	JIT – Just in time manufacturing. Transportation, Inventory, Movement, Waiting, Over-processing. Over production Defects Waste
HT5	NEA improvement May/June exam preparation	NEA and Exam work revision and re-submissions		Exam homework topic booklets to be completed.	